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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314				
EXAMINER				
CROWELL, ANNA M				
ART UNIT		PAPER NUMBER		
1792				
NOTIFICATION DATE		DELIVERY MODE		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com
oblonpat@oblon.com
jgardner@oblon.com

Office Action Summary

Application No.

10/796,116

Applicant(s)

MORIMOTO ET AL.

Examiner

Michelle Crowell

Art Unit

1792

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 December 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12, 15 and 16 is/are pending in the application.
- 4a) Of the above claim(s) 1-6 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7-12 and 15-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/S5108)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(c), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(c) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on December 29, 2008 has been entered.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 7-9 and 11-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koshiishi et al. (U.S. 5,919,332) in view of Yada et al. (J.P. 2002-359203).

Referring to Figure 1 and column 9, line 7-column 11, line 36, Koshiishi et al. discloses a plasma processing apparatus comprising: a lower electrode 6 for placing an object W to be processed thereon (col. 9, lines 16-19); an upper electrode 21 disposed above the lower electrode 6 so as to oppose it (col. 9, lines 66-67); an adjusting mechanism 7 for adjusting a spacing between the upper and lower electrodes 21, 6 by raising or lowering the lower electrode, the adjusting mechanism including a driving mechanism 8 (col. 9, lines 20-27); and a high-frequency power supply 47, 44 for applying high-frequency power to at least one of the upper and lower electrodes 21, 6 the high-frequency power being applied to either one of the electrodes to cause plasma igniting (col. 11, lines 23-29).

Koshiishi et al. fail to teach wherein the drive mechanism maintains the spacing at a constant second spacing, which is larger than a constant first spacing, for an initial period of time immediately after the time of plasma ignition, wherein the drive mechanism subsequently sets the spacing from the constant second spacing directly to the constant first spacing, wherein the drive mechanism subsequently sets the spacing from the constant first spacing directly to a constant second spacing before the time of plasma extinction.

Referring to Drawings 1 & 2 and paragraphs [0040]-[0046], Yada et al. teach a plasma processing apparatus wherein a drive mechanism 8,9 maintains the spacing at a constant second spacing, which is larger than a constant first spacing, for an initial period of time immediately after the time of plasma ignition, wherein the drive mechanism subsequently sets the spacing from the constant second spacing to the constant first spacing, wherein the drive mechanism

subsequently sets the spacing from the constant first spacing to a constant second spacing before the time of plasma extinction. For example, in Yada et al. the spacing changes from 40 mm to 15 mm to 40 mm between plasma ignition and plasma extinction. By adjusting the electrode spacing, optimal plasma processing conditions can be achieved. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the drive mechanism of Koshiishi et al. to maintain spacing at a constant second spacing, which is larger than a constant first spacing, for an initial period of time immediately after the time of plasma ignition, wherein the drive mechanism subsequently sets the spacing from the constant second spacing to the constant first spacing, wherein the drive mechanism subsequently sets the spacing from the constant first spacing to a constant second spacing before the time of plasma extinction as taught by Yada et al. in order to achieve optimal plasma processing conditions. It should be noted that the apparatus does not explicitly show that the drive mechanism sets the spacing from second spacing directly to a first spacing and then directly back to a second spacing; however, the apparatus is still capable of operating in that manner by simply inputting the desired parameters into the computer. In addition, a claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim (Ex parte Masham, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987)). Thus, since the apparatus of Koshiishi et al. in view of Yada et al. teaches all of the structural limitations of the claim, the claimed requirements are satisfied.

With respect to claim 8, the plasma processing apparatus of Koshiishi et al. further comprising: a first high-frequency power supply 247 for applying first high-frequency power to the upper electrode 21 (col. 9, lines 23-29); and a second high-frequency power supply 44 for applying second high-frequency power having a lower frequency than the first high-frequency power to the lower electrode (col. 9, lines 17-23).

With respect to claim 9, the plasma processing apparatus of Koshiishi et al. further includes that the adjusting mechanism 7, 8 has a drive mechanism for moving the lower electrode away from the upper electrode (col. 9, lines 20-27).

With respect to claim 11, the plasma processing apparatus of Koshiishi et al. further includes that etching is performed as the plasma processing (col. 9, lines 7-9).

With respect to claim 12, the plasma processing apparatus of Koshiishi et al. in view of Yada et al. further includes wherein the driving mechanism sets the spacing to the first spacing (1.5 cm) after the time of plasma ignition (paragraph [0046] of Yada et al.).

With respect to claim 15, the plasma processing apparatus of Koshiishi et al. in view of Yada et al. further wherein the first spacing (1.5 cm) is a narrowest spacing provided by the apparatus during between the time of the plasma ignition and the time of plasma extinction (paragraph [0046] of Yada et al.).

With respect to claim 16, the plasma processing apparatus of Koshiishi et al. in view of Yada et al. further wherein the first spacing is 15 mm (paragraph [0046] of Yada et al.). It should be noted that Yada et al. does not explicitly teach that the first spacing is 17 mm; however, a prima facie case of obviousness still exists because it would have been obvious to

one of ordinary skill in the art to optimize the spacing during routine experimentation depending upon, for example, the plasma condition, and would not lend patentability to the instant application absent the showing of unexpected results. Furthermore, where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device (In *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984)).

4. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Koshiishi et al. (U.S. 5,919,332) in view of Yada et al. (J.P. 2002-359203) as applied to claims 7-9, 11-12, and 15-16 above, and further in view of Tsuchiya et al. (U.S. 5,716, 534).

The teachings of Koshiishi et al. in view of Yada et al. have been discussed above.

Koshiishi et al. in view of Yada et al. fail to specifically teach that the first high-frequency power is turned off after the second high-frequency power is turned off.

Referring to column 12, line 66-column 13, line 8, Tsuchiya et al. teaches a plasma processing apparatus wherein the first high-frequency power is turned off after the second high-frequency power is turned off so that the charges accumulated on the object can be removed. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention for the first high-frequency power of Koshiishi et al. in view of Yada et al. to be turned off after the second high-frequency power is turned off as taught by Tsuchiya et al. so that the charges accumulated on the object can be removed.

Response to Arguments

5. With respect to the Numazawa reference, the arguments are moot since the reference has been dropped from the final rejection.

6. Applicant has argued that Yada fails to maintain a constant second spacing for an initial period of time immediately after the time of plasma ignition; however, it should be noted that Yada does teach a constant second spacing of 4cm after plasma ignition (i.e. first set to 4 cm, par.[0045]). Also, the claim fails to require a specific time period to maintain the second spacing; yet, the apparatus is still capable of setting the controller by a user to the desired time period for the second spacing. Furthermore, apparatus claims cover what a device is, not what a device does (Hewlett-Packard Co. v. Bausch & Lomb Inc., 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990)). Thus, since the apparatus of Koshiishi et al. in view of Yada teaches the structural limitations and is capable of maintaining a constant second spacing, then it satisfies the claimed limitations.

7. Applicant has argued that Yada fails to directly change from a constant second spacing to a constant first spacing or from a constant first spacing to a constant second spacing; however, it should be noted that the invention claimed is an apparatus. Thus, while features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function (In re Schreiber, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429,1431-32 (Fed. Cir. 1997)). In the instant case, Yada teaches a structure having a drive mechanism 8 that changes the spacing of the electrode. Since the drive mechanism is operated by a controller 9, the spacing can simply be changed based on the user's inputted parameters and thus the apparatus is capable of directly changing from a

constant second spacing to a constant first spacing or from a constant first spacing to a constant second spacing. Thus, since the apparatus of Koshiishi et al. in view of Yada teaches the structural limitations and is capable of directly changing from a constant second spacing to a constant first spacing or from a constant first spacing to a constant second spacing, then it satisfies the claimed limitations.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michelle Crowell whose telephone number is (571)272-1432. The examiner can normally be reached on M-Th (9:30 -6:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on (571) 272-1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ram N Kackar/
Primary Examiner, Art Unit 1792

/Michelle Crowell/
Examiner, Art Unit 1792